



City of Fairfax

2012 Water Quality Report

Dear Valued Customer:

The City of Fairfax is pleased to provide you with the 2012 Annual Drinking Water Quality Report.

We are dedicated to providing the highest quality drinking water for consumption and fire protection. We are proud to report that your drinking water meets or exceeds State and Federal drinking water standards that are administered by the Virginia Department of Health (VDH). Please take time to review this report and feel free to contact us with any questions.



The City of Fairfax owns and operates the Goose Creek Water Treatment Plant, which is located in Loudoun County. In addition to serving the City of Fairfax, the facility also serves parts of Loudoun and Fairfax Counties by withdrawing water from Beaverdam Reservoir and Goose Creek Reservoir. Recently, the Virginia Department of Health conducted a source water assessment of our system and determined that the reservoirs are of high susceptibility to contamination according to the criteria developed by the State and its approved Source Water Assessment, as are all surface water bodies. You may obtain a copy of this State report with detailed information concerning land use and any known contaminants by calling the City of Fairfax Utilities Department at 703-385-7920. The City has the ability to purchase water from Fairfax Water (Fairfax County). For information on Fairfax County water quality, please call 703-698-5800 or log onto their website at www.fcwa.org.



Goose Creek Water Treatment Plant

Licensed operators use multiple processes to remove particulate, organic, inorganic, and microbial contaminants. Drinking water is supplied through a 24-inch transmission main for distribution to consumers. We continually strive to maintain a quality product and are proud to bring our customers safe drinking water to meet their needs.

Substances Detected in Your Water



Substances (Units)	Level Detected (Min.-Max.)	MCL (Allowed)	Goal (EPAs MCLG)	Major Source in Drinking Water	Meets or Surpasses Standards
Beta/Photon Emitters (pCi/L) ^{1,2}	6.4	50	Zero	Decay of natural and man made deposits	Yes
Total Barium (mg/L)	0.018	2	2	Erosion of natural deposits	Yes
Chlorine MRDL (ppm)	2.4	4	4	Water additive used to control microbes	Yes
Copper (mg./L) ^{3,4}	0.38	Action level 1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits	Yes
Fluoride (ppm)	0.5 (0.1-0.69)	4	4	Erosion of natural deposits; additive which promotes strong teeth	Yes
Haloacetic Acids (HAAs) (ppb)	29 (8.7-84.3)	60	N/A	Byproduct of drinking water chlorination	Yes
Lead (mg/L) ^{3,4}	<0.002	Action Level 15	Zero	Corrosion of household plumbing systems; erosion of natural deposits	Yes
Nitrate (ppm)	0.039	10	10	Runoff from fertilizer use; septic tank leaching; sewage; erosion of natural deposits	Yes
Total Organic Carbon (TOC) ⁵	1.32	Treatment Technique	Treatment Technique	Naturally occurring organic matter	Yes
Trihalomethanes (ppb)	35 (11.1-98.1)	80	N/A	Byproduct of drinking water chlorination	Yes
Turbidity (NTU) (settled) ⁶	0.3	Treatment Technique	Treatment Technique	Soil runoff; raw water	Yes
Radium (pCi/L) ¹	<0.8	5	Zero	Erosion of natural deposits	Yes

¹ Testing required every three years. Performed in 2012.

² EPA considers 50 pCi/L to be the level of concern for beta particles

³ No sampling exceeded Action Level.

⁴ Testing required every three years. Data from 2011.

⁵ TOC reported as a removal ratio on a running annual basis. The lowest monthly Removal ratio must be greater than or equal to 1.0 .

⁶ Turbidity levels are measured during the treatment process after filtration. The turbidity level of filtered water shall be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month and less than 1 NTU at all times. The lowest percentage of samples meeting the turbidity limits was 99.99%..

Abbreviations and Definitions

Action Level - concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

MCLG - Maximum Contaminant Level Goal (the level of a contaminant in drinking water below which there is no known expected risk to health.) MCLGs allow for a margin of safety.

MCL - Maximum Contaminant Level - (the highest level of a contaminant that is allowed in drinking water.) MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MRDL - Maximum Residual Disinfection Level (the highest level of a disinfectant allowed in drinking water) There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG—Maximum Residual Disinfectant Level or Goal (the level of a drinking water disinfectant below which there is no known or expected health risk) MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

mrem/year - millirems per year (a measure of radiation absorbed by the body.)

NTU - Nephelometric Turbidity Units

pCi/L - Picocuries per liter (a measure of radioactivity in water)

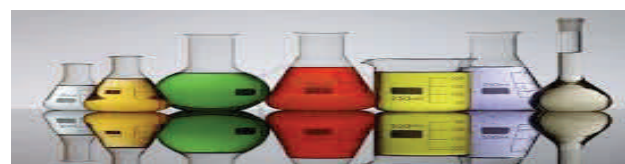
ppb - parts per billion

ppm - parts per million

Treatment Technique - Required process intended to reduce the level of a contaminant during drinking water treatment.

Turbidity - a measure of the clarity of water, measured in NTUs. Turbidity has no health effects, but can hinder the effectiveness of disinfectants.

ND—None detected



As in previous years, the City of Fairfax is proud to report that there were no detections of cryptosporidium, fecal coliforms, total coliforms, or methyl tertiary-butyl ether (MTBE), a gasoline additive, in the water sampled in 2012.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. City of Fairfax is responsible for providing high quality drinking water, but cannot control the variety of materials used in private plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 15 to 30 seconds or until it becomes cold or reaches a steady temperature before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at <http://www.epa.gov/safewater/lead>.

Why Your Water Must Be Treated



Small amounts of some contaminants may be present in drinking water and bottled water. This does not indicate that the water poses a health risk. Health care providers can provide information about drinking water for people who are immuno-compromised, those undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, the elderly, and infants. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants.

The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline, 1-800-426-4791.

Virginia's drinking water (both tap and bottled water) sources include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive materials, and can pick up substances resulting from the presence of human or animal activities. Some of these contaminants are:

- Microbial contaminants**, such as viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Filtration and disinfection removes microbial contaminants. Parasites such as *Cryptosporidium* and *Giardia* may cause illness. These parasites are found in places including swimming pools, rivers, and drinking water. Treatment techniques used by the City of Fairfax provide optimum removal of these contaminants.

- Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.

- Pesticides and herbicides**, may come from a variety of sources such as agricultural industries, urban stormwater runoff, and residential uses.

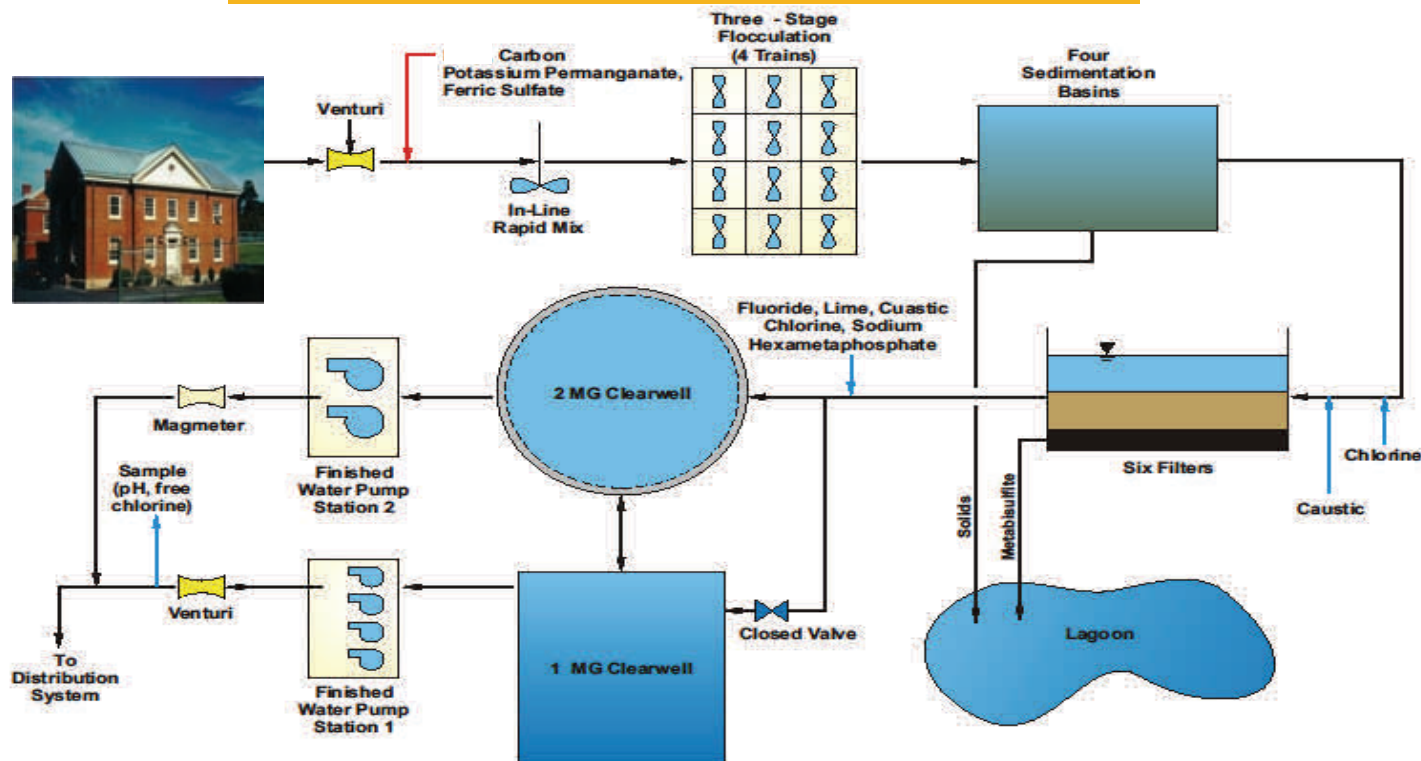
- Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

- Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities. Those drinking water contaminated with alpha and beta radiation at high levels may have an increased risk of getting cancer.

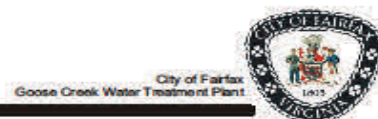
- Disinfection byproducts**, disinfection, which prevents the occurrence and spread of many serious potentially deadly diseases such as cholera, dysentery, and typhoid may have small amounts of byproducts resulting from the use of chlorine as a disinfectant. Liver, kidney, or central nervous system problems may develop after exposure to drinking water with levels of disinfection byproducts. Disinfection byproducts such as trihalomethanes (THMs) and haloacetic acids (HAAs), in addition to naturally occurring organic matter such as total organic carbon (TOC) are regulated to ensure limited exposure to these contaminants.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Goose Creek Water Treatment Plant



Goose Creek Water Treatment Plant
Process Flow Schematic



2012 Drinking Water Quality Report



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Your Comments Are Appreciated!

The City of Fairfax appreciates your comments and questions. Please feel free to contact Lauren S. Sufleta, P.E., Assistant Director of Utilities at 703-385-7920 for further information concerning your 2012 Drinking Water Quality Report or other water quality issues.

Please log onto the City website, www.fairfaxva.gov, to learn more about City events, City Council meetings, and updated information and activities within the City of Fairfax.

As mandated by the EPA, this report will be provided annually to customers. We are proud to report that the drinking water quality for the City of Fairfax was well within State and Federal drinking water standards. We hope you find this report informative and please feel free to contact us with any comments.

If assistance is needed in translating this report, please contact the Utilities office at 703-385-7920.

Si necesita asistencia en traducir este reporte, por favor llame al Departamento de Utilidades al 703-385-7920.